USDA Foreign Agricultural Service

Syria: Crop Progress Report

MY 2009/10

March Summary

April 1, 2009

(1) Based on season-to-date conditions, winter grains (wheat and barley) production in MY 2009/10 is expected to be much improved over last year's severely drought reduced harvest, though total production may fall slightly below normal. Seasonal rainfall has been mixed, with the best accumulations occurring in the north-central and northwestern provinces. Much below normal rainfall has plagued much of the remainder of the country for the second consecutive year, including the major grain producing province of Al-Hasakah in the northeast. It is apparent that irrigated grain crops are in better overall condition than at this time last year in the major producing provinces of Syria, despite the fact that reservoirs are showing well-below normal storage levels. This may indicate that regional water-use policy is favoring grain production this year, irrespective of the potential longer-term water supply problems this poses.

(2) Table 1 indicates projected wheat and barley area, production, and yield statistics at the national level for MY 2009/10. These projections are subject to change as the season progresses and more knowledge of current condition is acquired. Ongoing collection and processing of AWiFS imagery should provide more accurate provincial level data for future reports.

(3) Rainfall in the primary grain-producing provinces of northern Syria has been slightly-below to well-below normal for the season (Figure 1). However, a number of provinces have received at least 75 percent of normal rainfall this month (Figure 2), while parts of Aleppo (Halab) and Ar-Raqqah provinces have received in excess of 150 percent of normal precipitation during March 2009. However, certain parts of the Al-Hasakah province have received below 50 percent of normal precipitation throughout both these time periods. The Dar'a and As-Suwayda provinces in the south (which coupled with the Al-Hasakah province provide 25% of the rainfed grains production) are also experiencing below-normal rains, although some of the early March precipitation was approaching normal amounts. The rainfall trends shown in the precipitation map appear to be consistent with the rainfall graphs shown in Figure 3, which indicate that appreciable rainfall occurred in late February and early March of 2009. The seven-day cumulative rainfall forecast for the next week (Figure 4) also indicates that most of northern Syria may receive up to 10 mm of rain, while Al-Hasakah province may benefit from rains in excess of 25 mm. High resolution Quickbird satellite imagery was used this month to ascertain the status of reservoirs in the predominantly dry regions of northeast Syria. The example provided (Figure 5) indicates that water levels in a major reservoir near the settlement of Al-Jawadiyah in Al-Hasakah province are clearly very low, and that drought is likely causing a regional decline in water supplies.

(4) MODIS NDVI vegetation index time series data (Figure 6) shows a significant improvement in overall grain crop development in many areas of Syria this season. Whether or not crop vegetation reaches near-normal levels is yet to be determined, as peak greenness typically occurs in April. Of particular note is how well the province of Al-Hasakah is doing despite the relative lack of rainfall it has experienced this season. The strong improvement in vegetative growth and vigor in Al-Hasakah suggests either increased levels of irrigation water are being supplied this year or that drought-resistant seed provided by the FAO were being used successfully. However, as a result of deficient rainfall, major rainfed grain areas in a number of provinces (Al-Hasakah, Ar-Raqqah, Aleppo, Damascus, Dar'a, and As-Suwayda) appear to be faring poorly both in comparison with the MY 2006/07 benchmark year and MY 2008/09. This indicates that rainfed grain area may be well-below normal this year, though somewhat improved over the situation during last years severe drought. Many poorly developed crop fields were turned over to grazing livestock last season, when it was apparent that crop yields would be extremely low. The seasonal NDVI time series for Al-Hasakah, Ar-Raqqah (Figure 8), Aleppo, and Idlib (Figure 9) suggest that higher grain yields can be expected from these provinces this year in comparison to MY2008/09.

(5) The strong development of crop vegetation in the irrigated portion of Al-Hasakah province was verified by Quickbird satellite imagery (Figure 10), showing significant growth of grain crops in the region north of the Badyan settlement. Vegetation in cultivated fields can also be seen throughout Syria in AWiFS satellite images (Figure 11).

Commodity	Attribute	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009	**2009/2010 (Projected)[1]**
Barley	Area Harvested (1000 HA)	1291	1327	1000	1000	350	**900**
	Production (1000 MT)	527	767	700	700	200	**650**
	Yield (MT/HA)	0.41	0.58	0.7	0.7	0.57	**0.72**
Wheat	Area Harvested (1000 HA)	1831	1904	1700	1700	800	**1500**
	Production (1000 MT)	4537	4669	4200	4000	2000	**3500**
	Yield	2.48	2.45	2.47	2.35	2.5	**2.33**

Not official USDA statistics

Table 1. Projected national barley and wheat crop production statistics for MY 2009/10 compared against previous years.

Data Source: MODIS NDVI; USDA-FAS Production, Supply, and Distribution online database.

[1] Projected statistics are modeled from historical data in correlation with MODIS NDVI. The model projects upon the most current March NDVI data and as such the model numbers will likely change as the season progresses and grain production nears its peak in April and May.

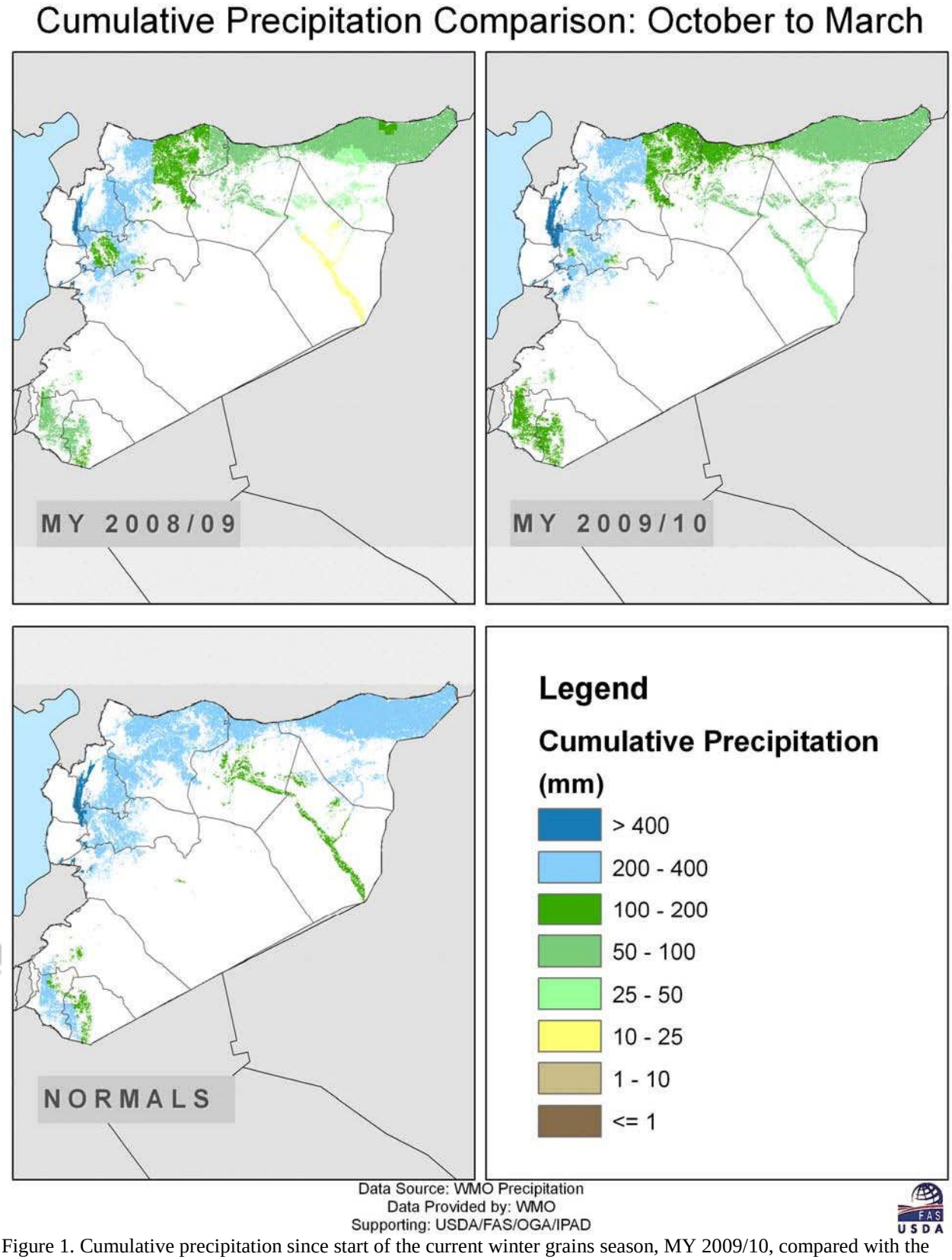


Figure 1. Cumulative precipitation since start of the current winter grains season, MY 2009/10, compared with the previous season, MY 2008/09, and precipitation normals.

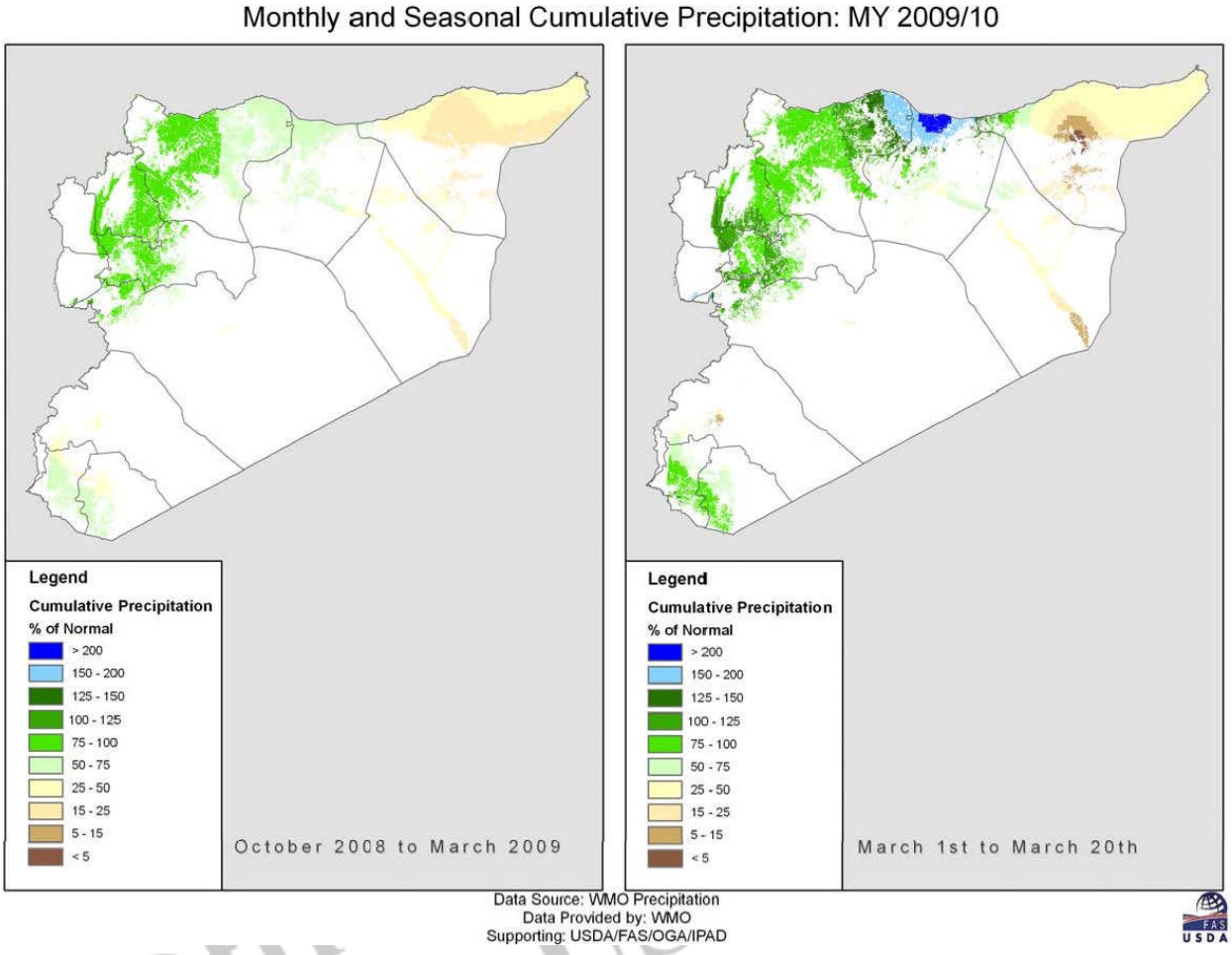


Figure 2. Cumulative precipitation during the first two decades of March 2009.

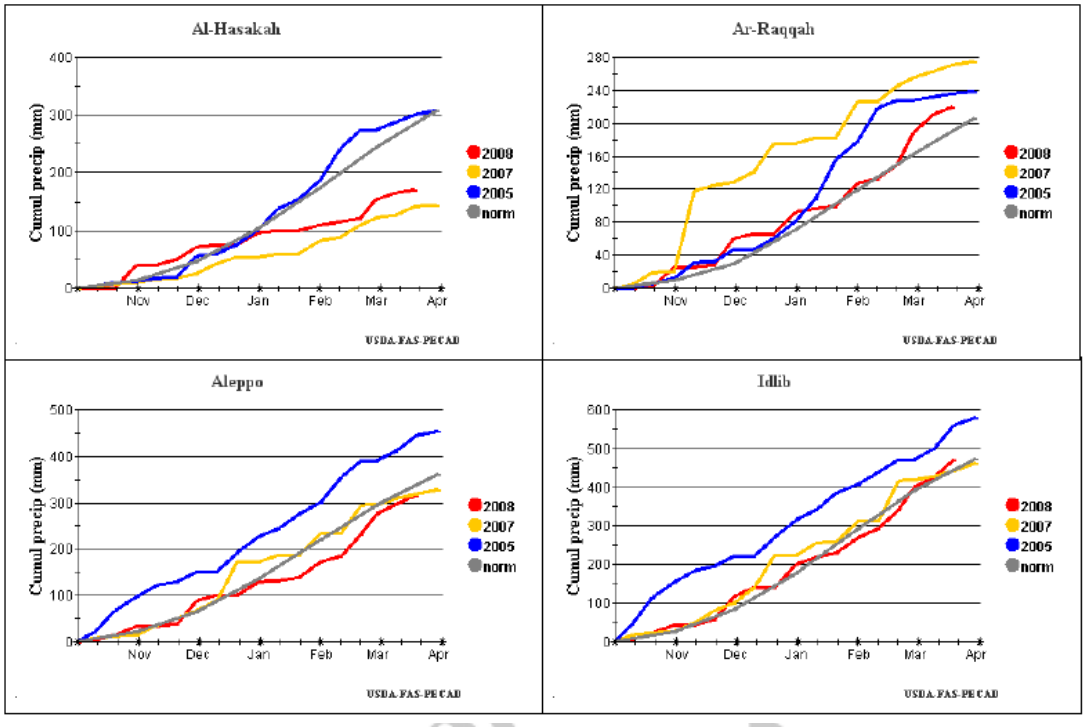


Figure 3: Cumulative rainfall for the four largest grain producing provinces in Syria. 2005, 2007, 2008, and "norm" denote MY 2006/07, MY 2008/09, MY 2009/10, and normals, respectively.

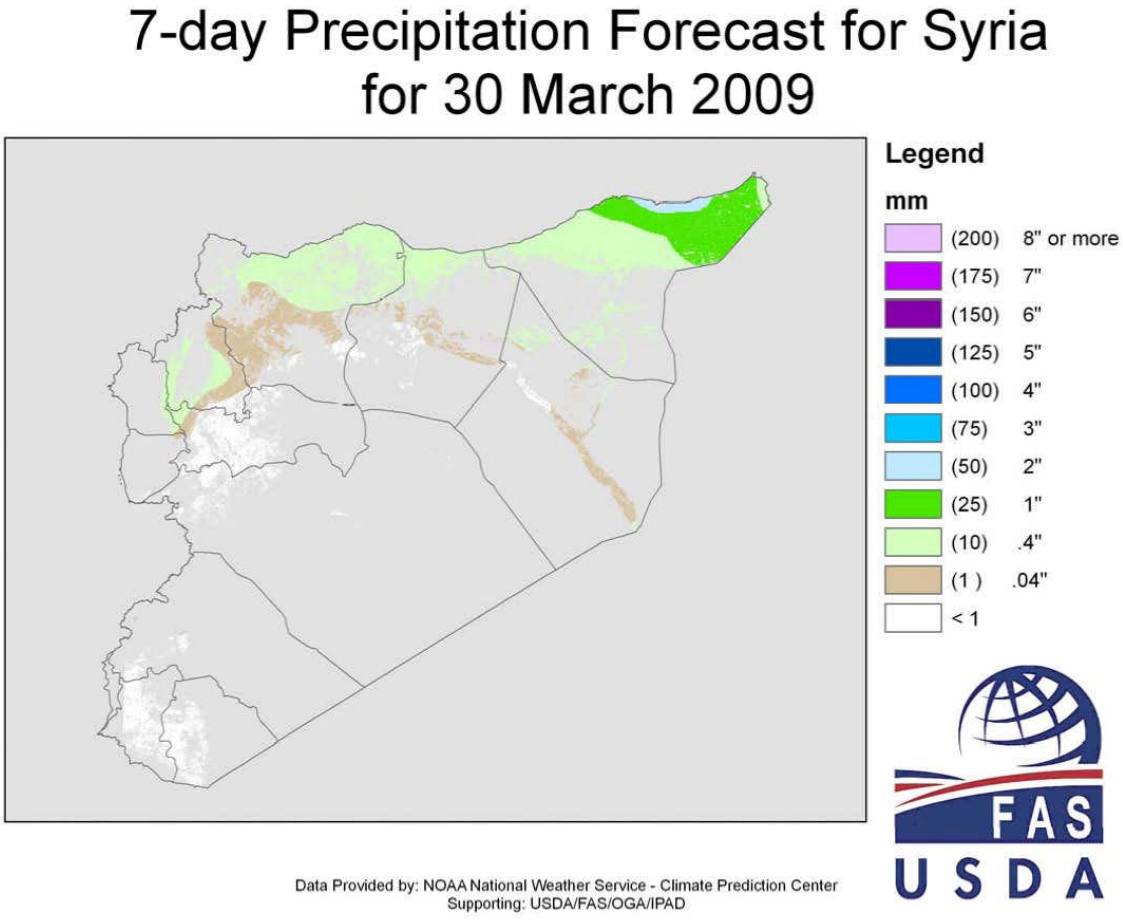


Figure 4. 7-day precipitation forecast for Syria as of March 26, 2009

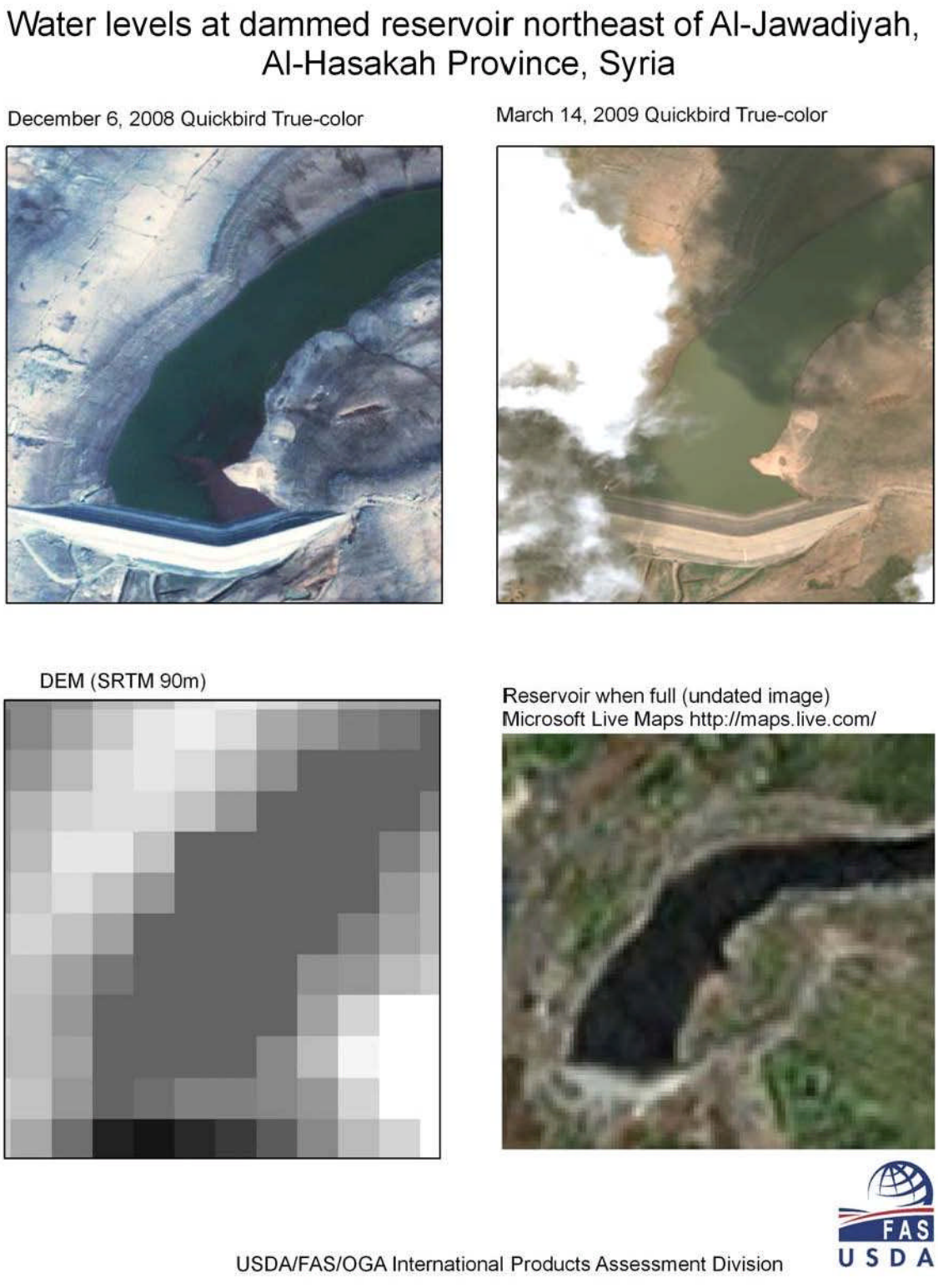


Figure 5: Water levels based upon Quickbird true-color, SRTM DEM, and historical imagery from Microsoft Live Maps. Quickbird imagery shows low water levels compared to DEM and Microsoft Live Maps imagery. Quickbird and DEM are at the same spatial scale.

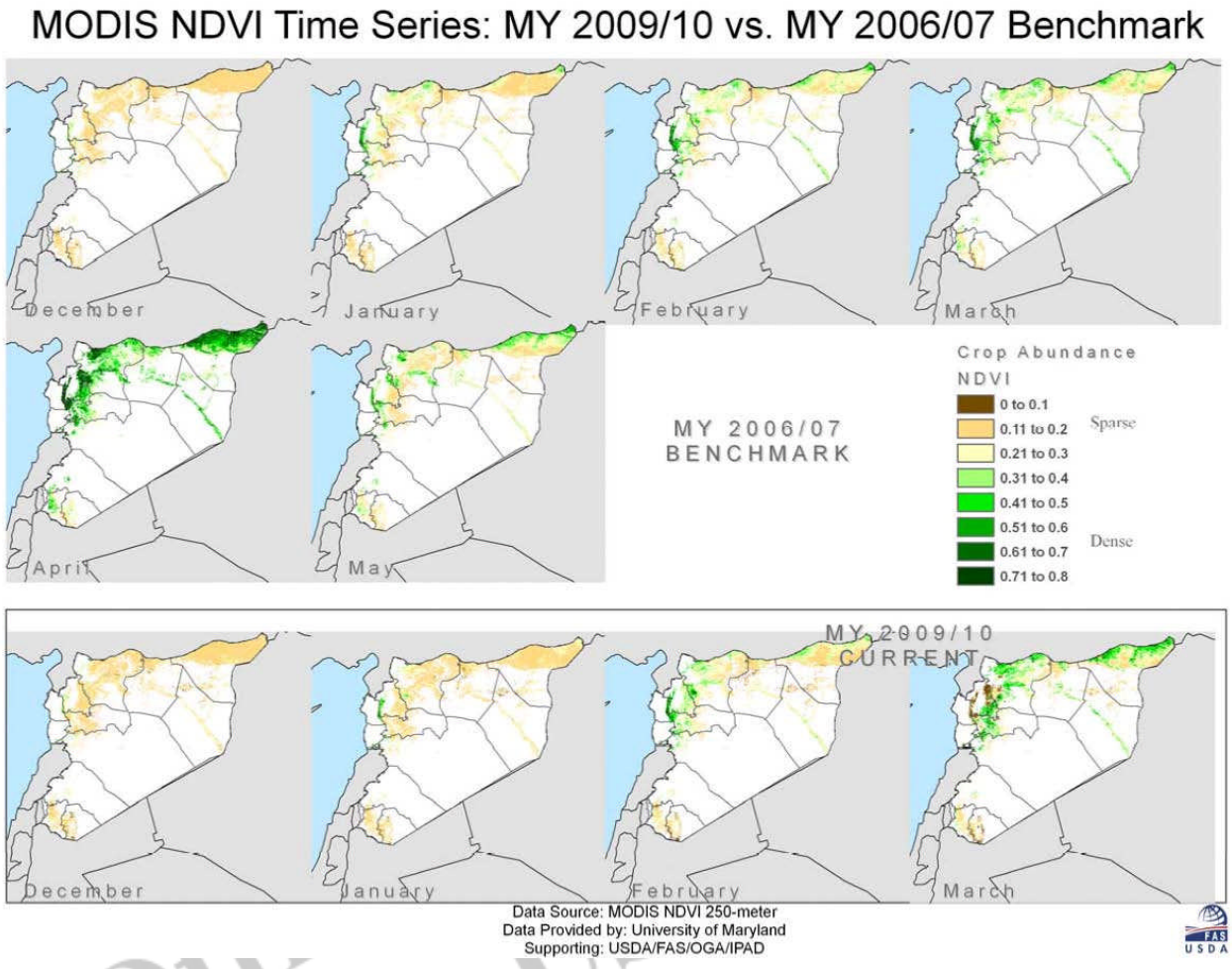


Figure 6. Time series of vegetation abundance through the winter grains season; MY 2005/06 vegetation represents a benchmark year for crop production in Syria, compared against the current conditions for MY 2009/10.

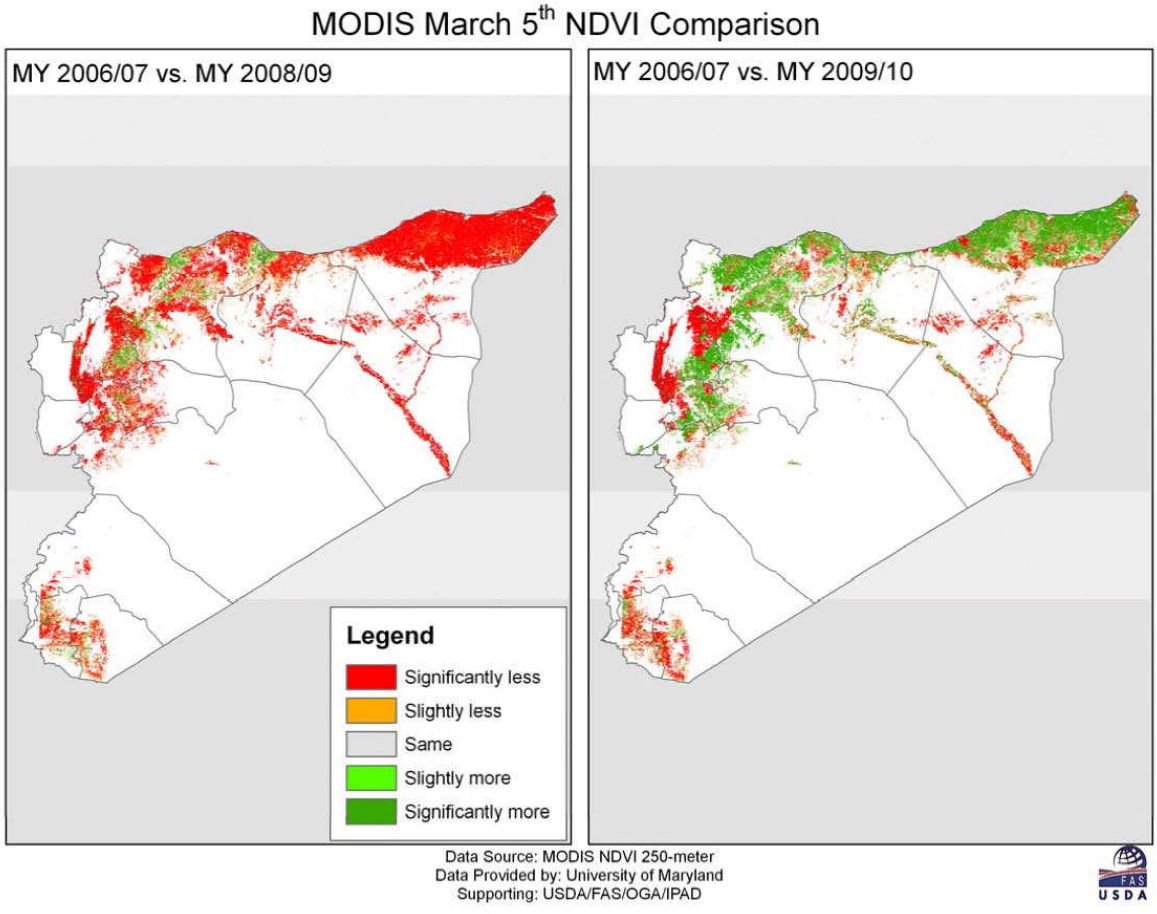


Figure 7. MODIS NDVI change analysis: Previous year MY 2008/09 and current year MY 2009/10 compared with MY 2006/07 benchmark year.

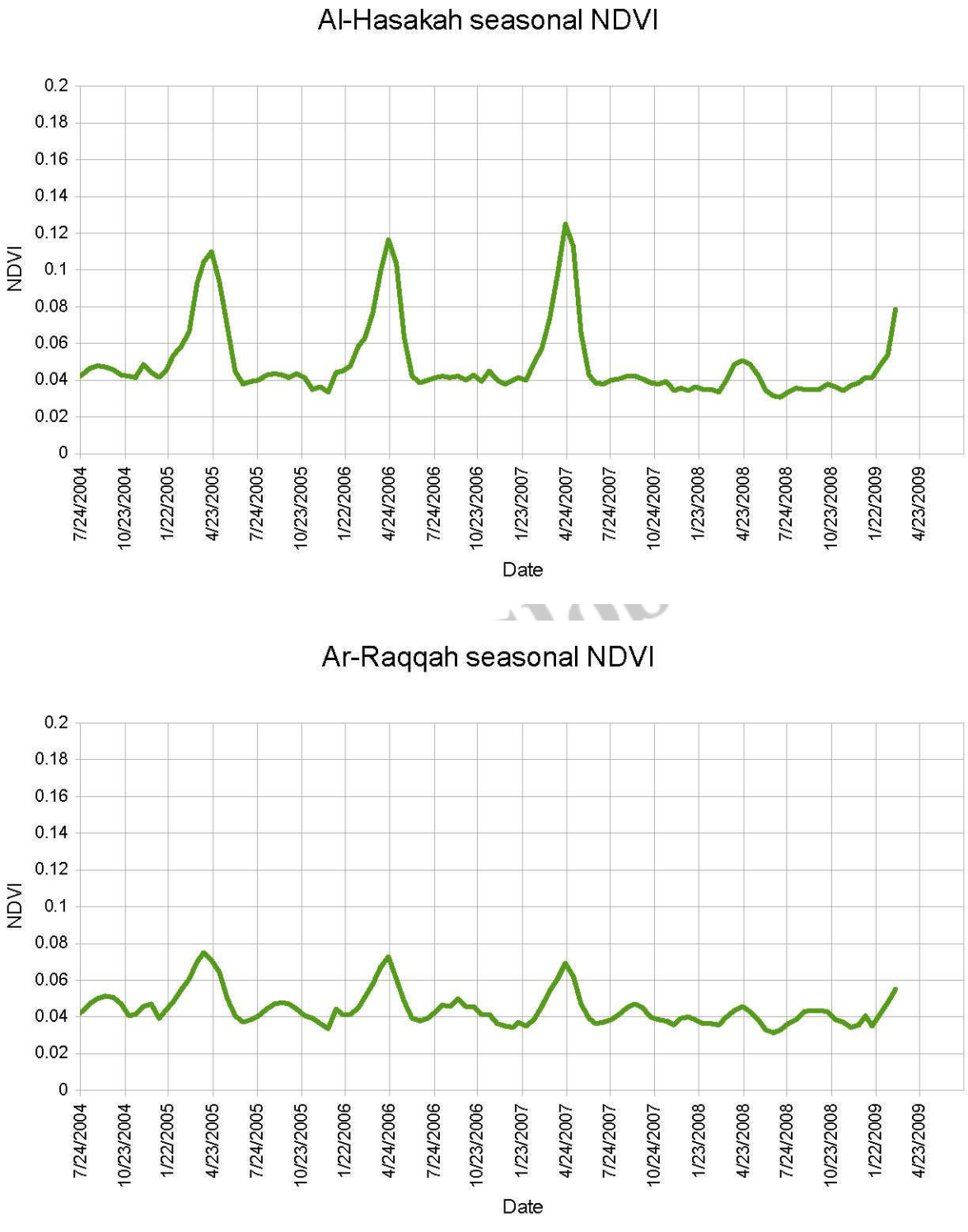
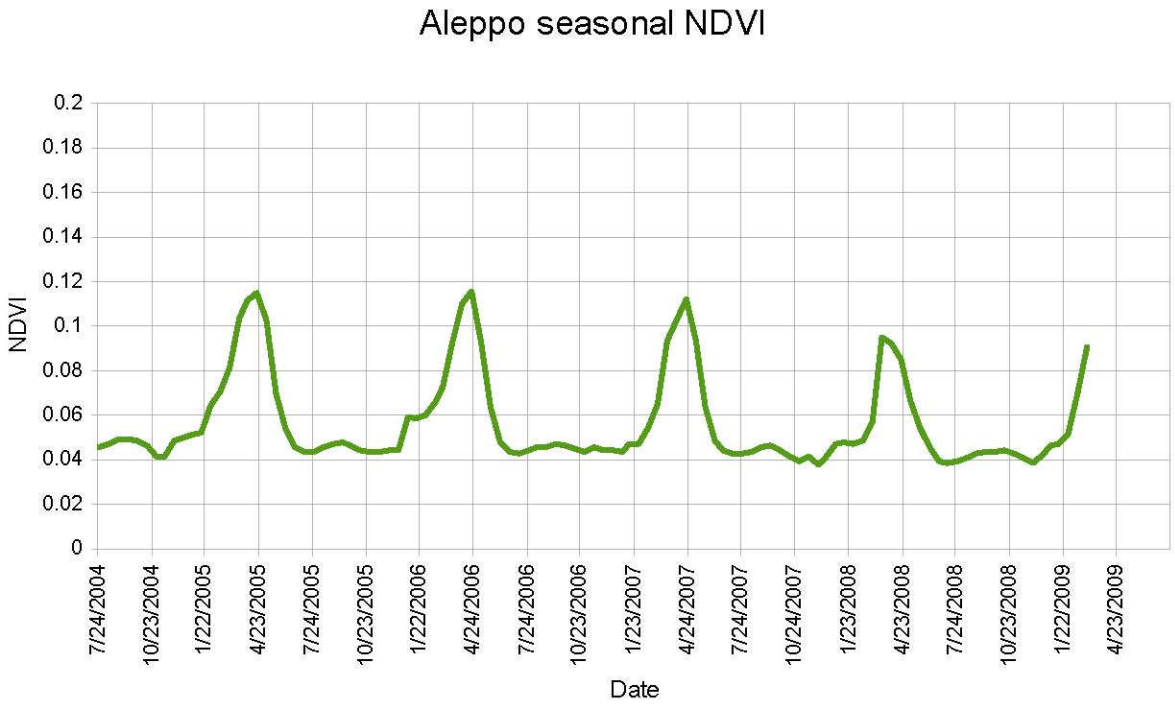


Figure 8: NDVI trends in Al-Hasakah and Ar-Raqqah provinces.



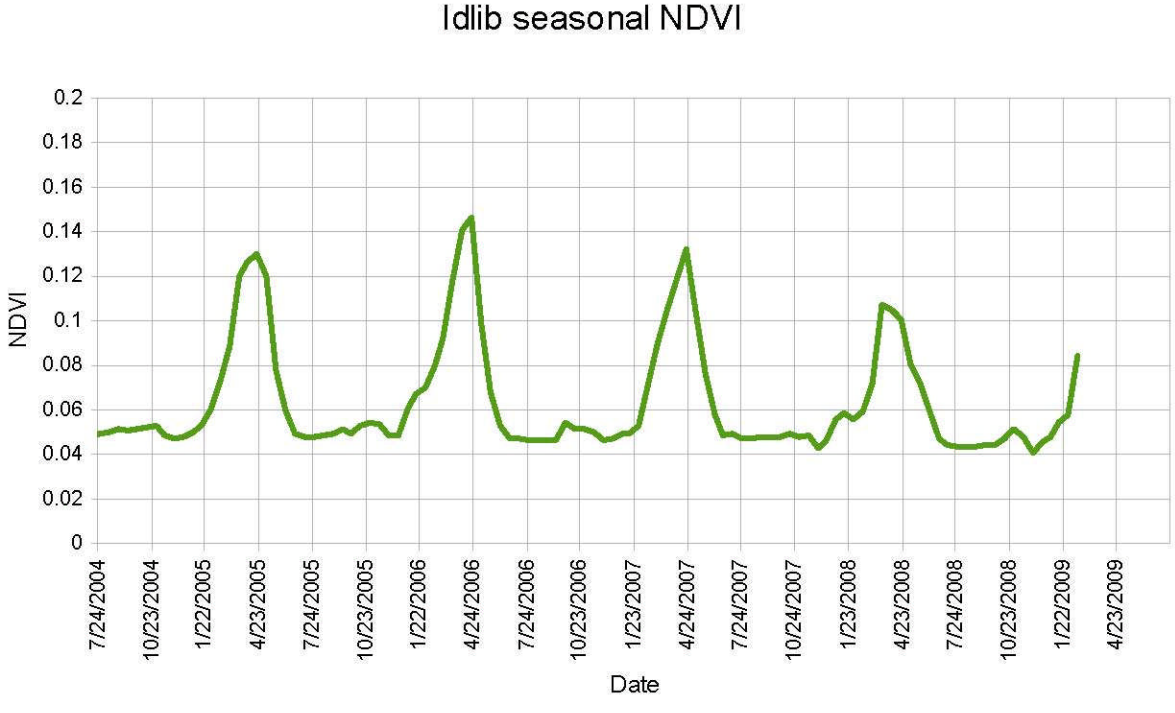


Figure 9: NDVI trends in Aleppo and Idlib provinces.

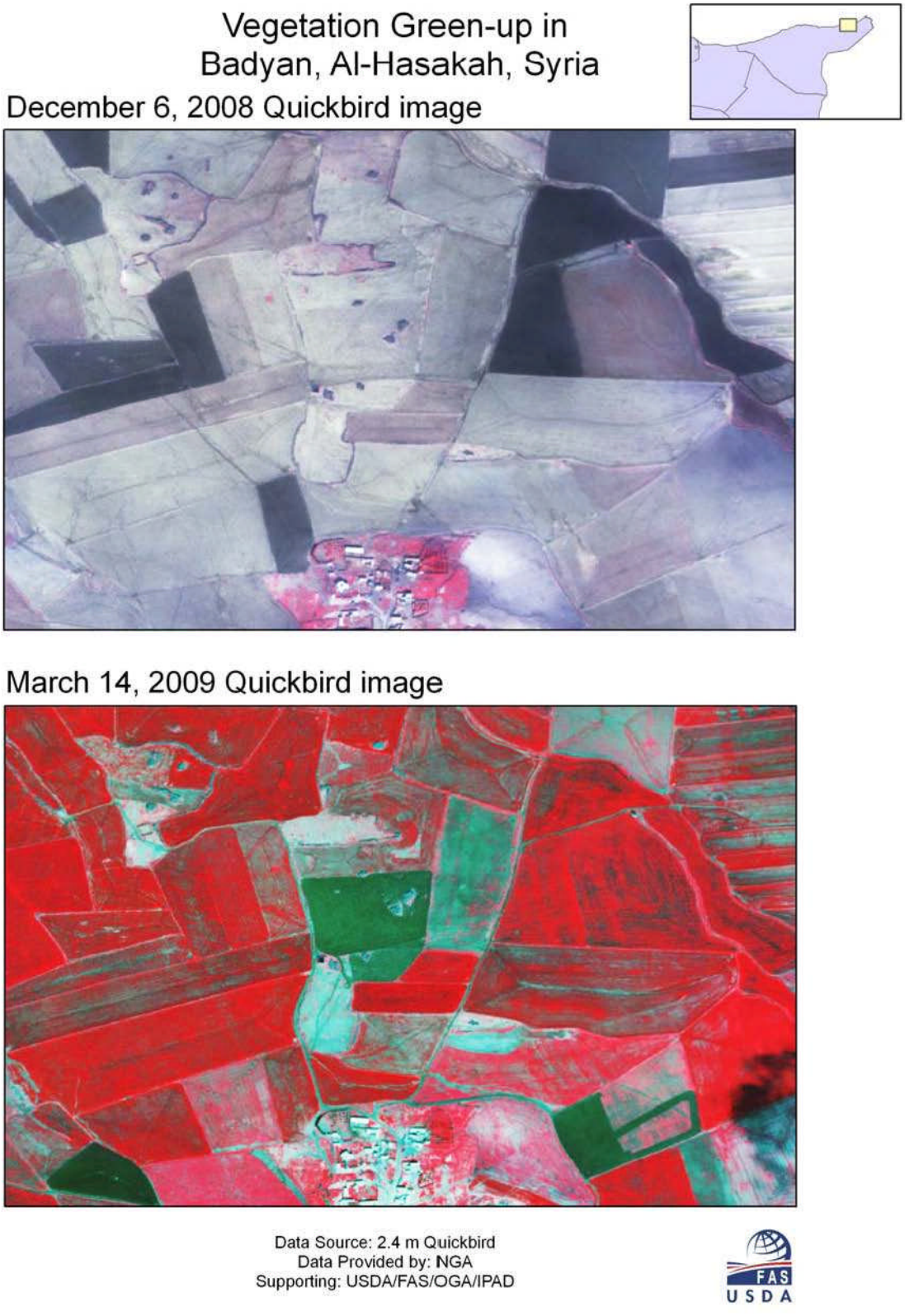


Figure 10: False-color images of vegetation green-up in the Al-Hasakah province showing crop development since December. Vegetated images appear red in these images.

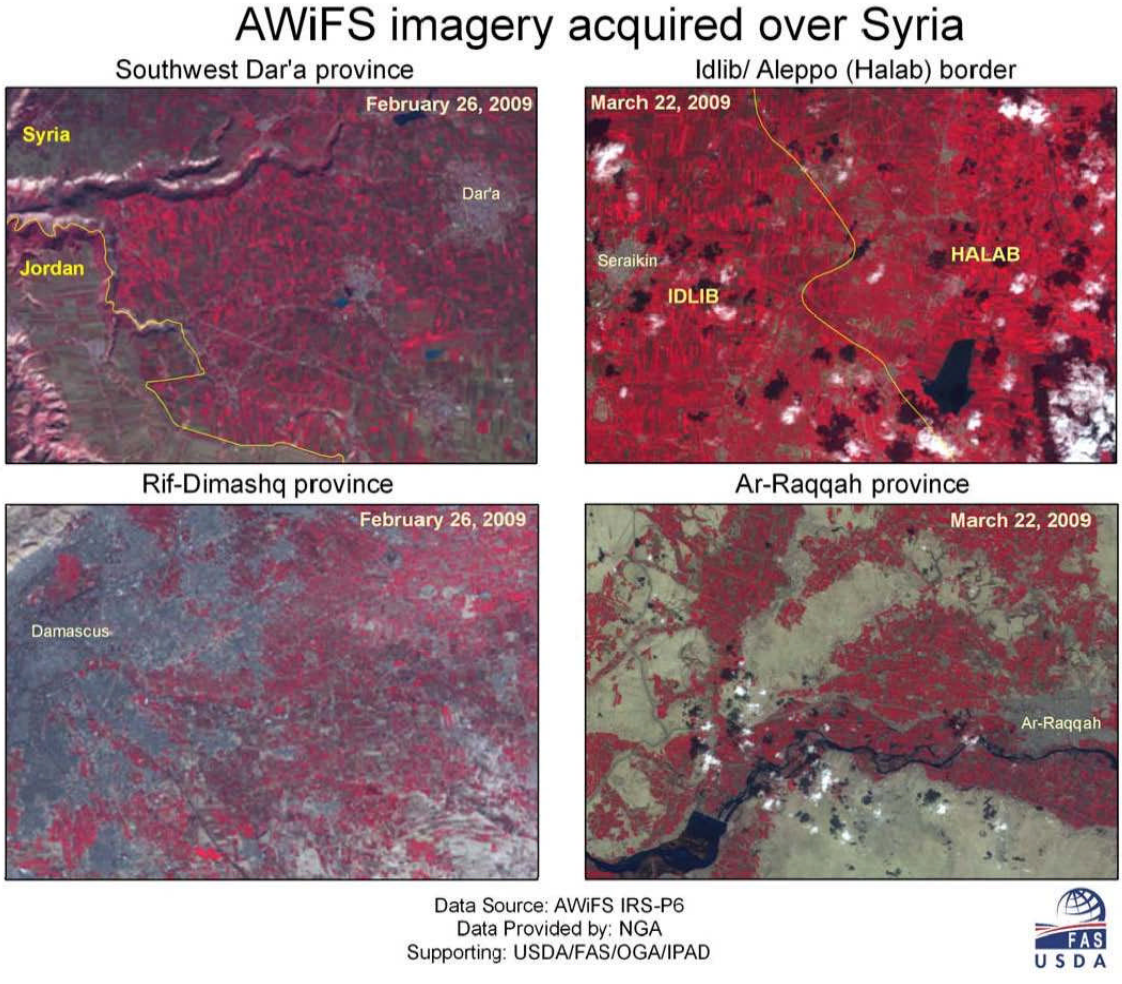
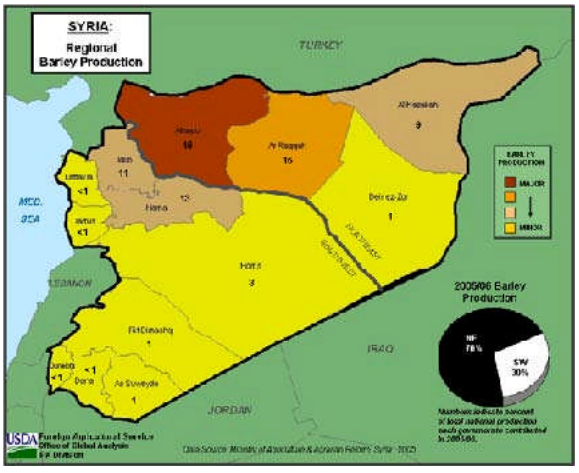
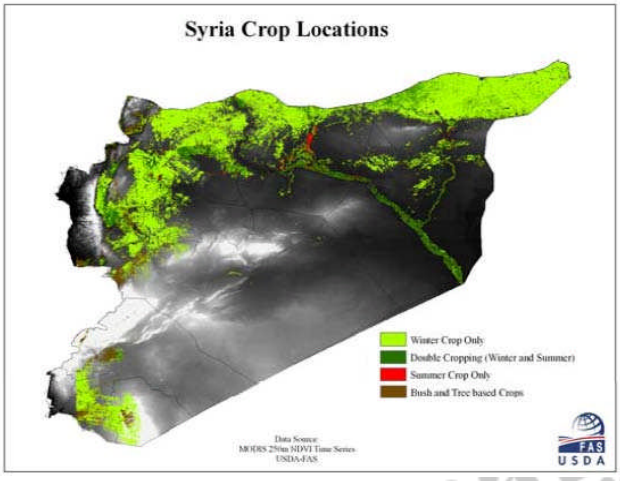
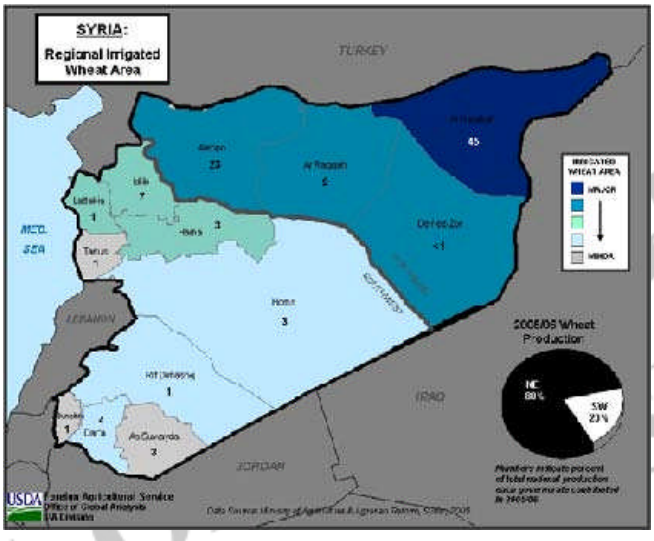


Figure 11: AWiFS images of southern Syria (left) and northern Syria (right) showing agricultural fields, with nearby settlement names.

APPENDIX







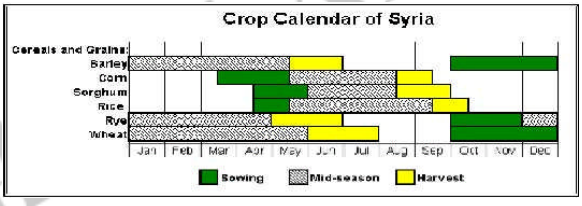


Figure A1. Crop calendar and regional wheat and barley production areas.

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